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212583.ST25  
SEQUENCE LISTING

<110> Nickoloff, Brian  
Miele, Lucio

<120> METHOD AND REAGENTS FOR EPITHELIAL BARRIER FORMATION AND TREATMENT  
OF MALIGNANT AND BENIGN SKIN DISORDERS BY MODULATING THE NOTCH PATHWAY

<130> 212583

<140> Unassigned

<141> 2001-08-31

<150> US 60/229,614

<151> 2000-08-31

<160> 18

<170> PatentIn version 3.1

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ccg Pro	ctg Leu 1445	atc Ile	gag Glu	gag Glu	gcg Ala	tgc Cys 1450	gag Glu	ctg Leu	ccc Pro	gag Glu	tgc Cys 1455	cag Gln	gag Glu	gac Asp	4374
gcg Ala	ggc Gly 1460	aac Asn	aag Lys	gtc Val	tgc Cys	agc Ser 1465	ctg Leu	cag Gln	tgc Cys	aac Asn	aac Asn 1470	cac His	gcg Ala	tgc Cys	4419
ggc Gly	tgg Trp 1475	gac Asp	ggc Gly	ggc Gly	gac Asp	tgc Cys 1480	tcc Ser	ctc Leu	aac Asn	ttc Phe	aat Asn 1485	gac Asp	ccc Pro	tgg Trp	4464
aag Lys	aac Asn 1490	tgc Cys	acg Thr	cag Gln	tct Ser	ctg Leu 1495	cag Gln	tgc Cys	tgg Trp	aag Lys	tac Tyr 1500	ttc Phe	agt Ser	gac Asp	4509
ggc Gly	cac His 1505	tgt Cys	gac Asp	agc Ser	cag Gln	tgc Cys 1510	aac Asn	tca Ser	gcc Ala	ggc Gly	tgc Cys 1515	ctc Leu	ttc Phe	gac Asp	4554
ggc Gly	ttt Phe 1520	gac Asp	tgc Cys	cag Gln	cgt Arg	gcg Ala 1525	gaa Glu	ggc Gly	cag Gln	tgc Cys	aac Asn 1530	ccc Pro	ctg Leu	tac Tyr	4599



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gac Asp	cag Gln 1535	tac Tyr	tgc Cys	aag Lys	gac Asp	cac His 1540	ttc Phe	agc Ser	gac Asp	ggg Gly	cac His 1545	tgc Cys	gac Asp	cag Gln	4644
ggc Gly	tgc Cys 1550	aac Asn	agc Ser	gcg Ala	gag Glu	tgc Cys 1555	gag Glu	tgg Trp	gac Asp	ggg Gly	ctg Leu 1560	gac Asp	tgt Cys	gcg Ala	4689
gag Glu	cat His 1565	gta Val	ccc Pro	gag Glu	agg Arg	ctg Leu 1570	gcg Ala	gcc Ala	ggc Gly	acg Thr	ctg Leu 1575	gtg Val	gtg Val	gtg Val	4734
gtg Val	ctg Leu 1580	atg Met	ccg Pro	ccg Pro	gag Glu	cag Gln 1585	ctg Leu	cgc Arg	aac Asn	agc Ser	tcc Ser 1590	ttc Phe	cac His	ttc Phe	4779
ctg Leu	cgg Arg 1595	gag Glu	ctc Leu	agc Ser	cgc Arg	gtg Val 1600	ctg Leu	cac His	acc Thr	aac Asn	gtg Val 1605	gtc Val	ttc Phe	aag Lys	4824
cgt Arg	gac Asp 1610	gca Ala	cac His	ggc Gly	cag Gln	cag Gln 1615	atg Met	atc Ile	ttc Phe	ccc Pro	tac Tyr 1620	tac Tyr	ggc Gly	cgc Arg	4869
gag Glu	gag Glu 1625	gag Glu	ctg Leu	cgc Arg	aag Lys	cac His 1630	ccc Pro	atc Ile	aag Lys	cgt Arg	gcc Ala 1635	gcc Ala	gag Glu	ggc Gly	4914
tgg Trp	gcc Ala 1640	gca Ala	cct Pro	gac Asp	gcc Ala	ctg Leu 1645	ctg Leu	ggc Gly	cag Gln	gtg Val	aag Lys 1650	gcc Ala	tcg Ser	ctg Leu	4959
ctc Leu	cct Pro 1655	ggt Gly	ggc Gly	agc Ser	gag Glu	ggt Gly 1660	ggg Gly	cgg Arg	cgg Arg	cgg Arg	agg Arg 1665	gag Glu	ctg Leu	gac Asp	5004
ccc Pro	atg Met 1670	gac Asp	gtc Val	cgc Arg	ggc Gly	tcc Ser 1675	atc Ile	gtc Val	tac Tyr	ctg Leu	gag Glu 1680	att Ile	gac Asp	aac Asn	5049
cgg Arg	cag Gln 1685	tgt Cys	gtg Val	cag Gln	gcc Ala	tcc Ser 1690	tcg Ser	cag Gln	tgc Cys	ttc Phe	cag Gln 1695	agt Ser	gcc Ala	acc Thr	5094
gat Asp	gtg Val 1700	gcc Ala	gca Ala	ttc Phe	ctg Leu	gga Gly 1705	gcg Ala	ctc Leu	gcc Ala	tcg Ser	ctg Leu 1710	ggc Gly	agc Ser	ctc Leu	5139
aac Asn	atc Ile 1715	ccc Pro	tac Tyr	aag Lys	atc Ile	gag Glu 1720	gcc Ala	gtg Val	cag Gln	agt Ser	gag Glu 1725	acc Thr	gtg Val	gag Glu	5184
ccg Pro	ccc Pro 1730	ccg Pro	ccg Pro	gcg Ala	cag Gln	ctg Leu 1735	cac His	ttc Phe	atg Met	tac Tyr	gtg Val 1740	gcg Ala	gcg Ala	gcc Ala	5229
gcc Ala	ttt Phe 1745	gtg Val	ctt Leu	ctg Leu	ttc Phe	ttc Phe 1750	gtg Val	ggc Gly	tgc Cys	ggg Gly	gtg Val 1755	ctg Leu	ctg Leu	tcc Ser	5274
cgc Arg	aag Lys 1760	cgc Arg	cgg Arg	cng Xaa	cag Gln	cat His 1765	ggc Gly	cag Gln	ctc Leu	tgg Trp	ttc Phe 1770	cct Pro	gag Glu	ggc Gly	5319
ttc Phe	aaa Lys 1775	gtg Val	tct Ser	gag Glu	gcc Ala	agc Ser 1780	aag Lys	aag Lys	aag Lys	cgg Arg	cgg Arg 1785	gag Glu	ncc Xaa	ctc Leu	5364

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ggc Gly	gag Glu 1790	gac Asp	tcc Ser	gtg Val	ggc Gly	ctc Leu 1795	aag Lys	ccc Pro	ctg Leu	aag Lys	aac Asn 1800	gct Ala	tca Ser	gac Asp	
ggt Gly	gcc Ala 1805	ctc Leu	atg Met	gac Asp	gac Asp	aac Asn 1810	cag Gln	aat Asn	gag Glu	tgg Trp	ggg Gly 1815	gac Asp	gag Glu	gac Asp	5454
ctg Leu	gag Glu 1820	acc Thr	aag Lys	aag Lys	ttc Phe	cgg Arg 1825	ttc Phe	gag Glu	gag Glu	ccc Pro	gtg Val 1830	gtt Val	ctg Leu	cct Pro	5499
gac Asp	ctg Leu 1835	gac Asp	gac Asp	cag Gln	aca Thr	gac Asp 1840	cac His	cgg Arg	cag Gln	tgg Trp	act Thr 1845	cag Gln	cag Gln	cac His	5544
ctg Leu	gat Asp 1850	gcc Ala	gct Ala	gac Asp	ctg Leu	cgc Arg 1855	atg Met	tct Ser	gcc Ala	atg Met	gcc Ala 1860	ccc Pro	aca Thr	ccg Pro	5589
ccc Pro	cag Gln 1865	ggt Gly	gag Glu	gtt Val	gac Asp	gcc Ala 1870	gac Asp	tgc Cys	atg Met	gac Asp	gtc Val 1875	aat Asn	gtc Val	cgc Arg	5634
ggg Gly	cct Pro 1880	gat Asp	ggc Gly	ttc Phe	acc Thr	ccg Pro 1885	ctc Leu	atg Met	atc Ile	gcc Ala	tcc Ser 1890	tgc Cys	agc Ser	ggg Gly	5679
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gcc Ala	gtc Val 1910	atc Ile	tcc Ser	gac Asp	ttc Phe	atc Ile 1915	tac Tyr	cag Gln	ggc Gly	gcc Ala	agc Ser 1920	ctg Leu	cac His	aac Asn	5769
cag Gln	aca Thr 1925	gac Asp	cgc Arg	acg Thr	ggc Gly	gag Glu 1930	acc Thr	gcc Ala	ttg Leu	cac His	ctg Leu 1935	gcc Ala	gcc Ala	cgc Arg	5814
tac Tyr	tca Ser 1940	cgc Arg	tct Ser	gat Asp	gcc Ala	gcc Ala 1945	aag Lys	cgc Arg	ctg Leu	ctg Leu	gag Glu 1950	gcc Ala	agc Ser	gca Ala	5859
gat Asp	gcc Ala 1955	aac Asn	atc Ile	cag Gln	gac Asp	aac Asn 1960	atg Met	ggc Gly	cgc Arg	acc Thr	ccg Pro 1965	ctg Leu	cat His	gcg Ala	5904
gct Ala	gtg Val 1970	tct Ser	gcc Ala	gac Asp	gca Ala	caa Gln 1975	ggt Gly	gtc Val	ttc Phe	cag Gln	atc Ile 1980	ctg Leu	atc Ile	cgg Arg	5949
aac Asn	cga Arg 1985	gcc Ala	aca Thr	gac Asp	ctg Leu	gat Asp 1990	gcc Ala	cgc Arg	atg Met	cat His	gat Asp 1995	ggc Gly	acg Thr	acg Thr	5994
cca Pro	ctg Leu 2000	atc Ile	ctg Leu	gct Ala	gcc Ala	cgc Arg 2005	ctg Leu	gcc Ala	gtg Val	gag Glu	ggc Gly 2010	atg Met	ctg Leu	gag Glu	6039
gac Asp	ctc Leu 2015	atc Ile	aac Asn	tca Ser	cac His	gcc Ala 2020	gac Asp	gtc Val	aac Asn	gcc Ala	gta Val 2025	gat Asp	gac Asp	ctg Leu	6084
ggc Gly	aag Lys 2030	tcc Ser	gcc Ala	ctg Leu	cac His	tgg Trp 2035	gcc Ala	gcc Ala	gcc Ala	gtg Val	aac Asn 2040	aat Asn	gtg Val	gat Asp	6129

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gcc Ala	gca Ala 2045	gtt Val	gtg Val	ctc Leu	ctg Leu	aag Lys 2050	aac Asn	ggg Gly	gct Ala	aac Asn	aaa Lys 2055	gat Asp	atg Met	cag Gln	6174	
aac Asn	aac Asn 2060	agg Arg	gag Glu	gag Glu	aca Thr	ccc Pro 2065	ctg Leu	ttt Phe	ctg Leu	gcc Ala	gcc Ala 2070	cgg Arg	gag Glu	ggc Gly	6219	
agc Ser	tac Tyr 2075	gag Glu	acc Thr	gcc Ala	aag Lys	gtg Val 2080	ctg Leu	ctg Leu	gac Asp	cac His	ttt Phe 2085	gcc Ala	aac Asn	cgg Arg	6264	
gac Asp	atc Ile 2090	acg Thr	gat Asp	cat His	atg Met	gac Asp 2095	cgc Arg	ctg Leu	ccg Pro	cgc Arg	gac Asp 2100	atc Ile	gca Ala	cag Gln	6309	
gag Glu	cgc Arg 2105	atg Met	cat His	cac His	gac Asp	atc Ile 2110	gtg Val	agg Arg	ctg Leu	ctg Leu	gac Asp 2115	gag Glu	tac Tyr	aac Asn	6354	
ctg Leu	gtg Val 2120	cgc Arg	agc Ser	ccg Pro	cag Gln	ctg Leu 2125	cac His	gga Gly	gcc Ala	ccg Pro	ctg Leu 2130	ggg Gly	ggc Gly	acg Thr	6399	
ccc Pro	acc Thr 2135	ctg Leu	tcg Ser	ccc Pro	ccg Pro	ctc Leu 2140	tgc Cys	tcg Ser	ccc Pro	aac Asn	ggc Gly 2145	tac Tyr	ctg Leu	ggc Gly	6444	
agc Ser	ctc Leu 2150	aag Lys	ccc Pro	ggc Gly	gtg Val	cag Gln 2155	ggc Gly	aag Lys	aag Lys	gtc Val	cgc Arg 2160	aag Lys	ccc Pro	agc Ser	6489	
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gca Ala	cgg Arg 2180	agg Arg	aag Lys	aag Lys	tcc Ser	cag Gln 2185	gay Asp	ggc Gly	aag Lys	ggc Gly	tgc Cys 2190	ctg Leu	ctg Leu	gac Asp	6579	
agc Ser	tcc Ser 2195	ggc Gly	atg Met	ctc Leu	tcg Ser	ccc Pro 2200	gtg Val	gac Asp	tcc Ser	ctg Leu	gag Glu 2205	tca Ser	ccc Pro	cat His	6624	
ggc Gly	tac Tyr 2210	ctg Leu	tca Ser	gac Asp	gtg Val	gcc Ala 2215	tcg Ser	ccg Pro	cca Pro	ctg Leu	ctg Leu 2220	ccc Pro	tcc Ser	ccg Pro	6669	
ttc Phe	cag Gln 2225	cag Gln	tct Ser	ccg Pro	tcc Ser	gtg Val 2230	ccc Pro	ctc Leu	aac Asn	cac His	ctg Leu 2235	cct Pro	ggg Gly	atg Met	6714	
ccc Pro	gac Asp 2240	acc Thr	cac His	ctg Leu	ggc Gly	atc Ile 2245	ggg Gly	cac His	ctg Leu	aac Asn	gtg Val 2250	gcg Ala	gcc Ala	aag Lys	6759	
ccc Pro	gag Glu 2255	atg Met	gcg Ala	gcg Ala	ctg Leu	ggc Gly 2260	ggg Gly	ggc Gly	ggc Gly	cgg Arg	ctg Leu 2265	gcc Ala	ttt Phe	gag Glu	6804	
act Thr	ggc Gly 2270	cca Pro	cct Pro	cgt Arg	ctc Leu	tcc Ser 2275	cac His	ctg Leu	cct Pro	gtg Val	gcc Ala 2280	tct Ser	ggc Gly	acc Thr	6849	
agc Ser	acc Thr 2285	gtc Val	ctg Leu	ggc Gly	tcc Ser	agc Ser 2290	agc Ser	gga Gly	ggg Gly	gcc Ala	ctg Leu 2295	aat Asn	ttc Phe	act Thr	6894	

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gtg	ggc	ggg	tcc	acc	agt	ttg	aat	ggt	caa	tgc	gag	tgg	ctg	tcc	6939
Val	Gly	Gly	Ser	Thr	Ser	Leu	Asn	Gly	Gln	Cys	Glu	Trp	Leu	Ser	
	2300					2305					2310				
cgg	ctg	cag	agc	ggc	atg	gtg	ccg	aac	caa	tac	aac	cct	ctg	cgg	6984
Arg	Leu	Gln	Ser	Gly	Met	Val	Pro	Asn	Gln	Tyr	Asn	Pro	Leu	Arg	
	2315					2320					2325				
ggg	agt	gtg	gca	cca	ggc	ccc	ctg	agc	aca	cag	gcc	ccc	tcc	ctg	7029
Gly	Ser	Val	Ala	Pro	Gly	Pro	Leu	Ser	Thr	Gln	Ala	Pro	Ser	Leu	
	2330					2335					2340				
cag	cat	ggc	atg	gta	ggc	ccg	ctg	cac	agt	agc	ctt	gct	gcc	agc	7074
Gln	His	Gly	Met	Val	Gly	Pro	Leu	His	Ser	Ser	Leu	Ala	Ala	Ser	
	2345					2350					2355				
gcc	ctg	tcc	cag	atg	atg	agc	tac	cag	ggc	ctg	ccc	agc	acc	cgg	7119
Ala	Leu	Ser	Gln	Met	Met	Ser	Tyr	Gln	Gly	Leu	Pro	Ser	Thr	Arg	
	2360					2365					2370				
ctg	gcc	acc	cag	cct	cac	ctg	gtg	cag	acc	cag	cag	gtg	cag	cca	7164
Leu	Ala	Thr	Gln	Pro	His	Leu	Val	Gln	Thr	Gln	Gln	Val	Gln	Pro	
	2375					2380					2385				
caa	aac	tta	cag	atg	cag	cag	cag	aac	ctg	cag	cca	gca	aac	atc	7209
Gln	Asn	Leu	Gln	Met	Gln	Gln	Gln	Asn	Leu	Gln	Pro	Ala	Asn	Ile	
	2390					2395					2400				
cag	cag	cag	caa	agc	ctg	cag	ccg	cca	cca	cca	cca	cca	cag	ccg	7254
Gln	Gln	Gln	Gln	Ser	Leu	Gln	Pro	Pro	Pro	Pro	Pro	Pro	Gln	Pro	
	2405					2410					2415				
cac	ctt	ggc	gtg	agc	tca	gca	gcc	agc	ggc	cac	ctg	ggc	cgg	agc	7299
His	Leu	Gly	Val	Ser	Ser	Ala	Ala	Ser	Gly	His	Leu	Gly	Arg	Ser	
	2420					2425					2430				
ttc	ctg	agt	gga	gag	ccg	agc	cag	gca	gac	gtg					7332
Phe	Leu	Ser	Gly	Glu	Pro	Ser	Gln	Ala	Asp	Val					
	2435					2440									

<210> 2

<211> 2444

<212> PRT

<213> Artificial Sequence

<220>

<221> misc\_feature

<222> (891)..(891)

<223> The 'Xaa' at location 891 stands for Gly, or Ala.

<220>

<221> misc\_feature

<222> (1763)..(1763)

<223> The 'Xaa' at location 1763 stands for Gln, Arg, Pro, or Leu.

<220>

&lt;221&gt; misc\_feature

&lt;222&gt; (1787)..(1787)

&lt;223&gt; The 'xaa' at location 1787 stands for Thr, Ala, Pro, or Ser.

&lt;220&gt;

&lt;223&gt; Constitutively Active Notch-1

&lt;400&gt; 2

Met Pro Pro Leu Leu Ala Pro Leu Leu Cys Leu Ala Leu Leu Pro Ala  
1 5 10 15

Leu Ala Ala Arg Gly Pro Arg Cys Ser Gln Pro Gly Glu Thr Cys Leu  
20 25 30

Asn Gly Gly Lys Cys Glu Ala Ala Asn Gly Thr Glu Ala Cys Val Cys  
35 40 45

Gly Gly Ala Phe Val Gly Pro Arg Cys Gln Asp Pro Asn Pro Cys Leu  
50 55 60

Ser Thr Pro Cys Lys Asn Ala Gly Thr Cys His Val Val Asp Arg Arg  
65 70 75 80

Gly Val Ala Asp Tyr Ala Cys Ser Cys Ala Leu Gly Phe Ser Gly Pro  
85 90 95

Leu Cys Leu Thr Pro Leu Asp Asn Ala Cys Leu Thr Asn Pro Cys Arg  
100 105 110

Asn Gly Gly Thr Cys Asp Leu Leu Thr Leu Thr Glu Tyr Lys Cys Arg  
115 120 125

Cys Pro Pro Gly Trp Ser Gly Lys Ser Cys Gln Gln Ala Asp Pro Cys  
130 135 140

Ala Ser Asn Pro Cys Ala Asn Gly Gly Gln Cys Leu Pro Phe Glu Ala  
145 150 155 160

Ser Tyr Ile Cys His Cys Pro Pro Ser Phe His Gly Pro Thr Cys Arg  
165 170 175

Gln Asp Val Asn Glu Cys Gly Gln Lys Pro Arg Leu Cys Arg His Gly  
180 185 190

Gly Thr Cys His Asn Glu Val Gly Ser Tyr Arg Cys Val Cys Arg Ala  
195 200 205

Thr His Thr Gly Pro Asn Cys Glu Arg Pro Tyr Val Pro Cys Ser Pro  
210 215 220

11-11-68

11-11-68

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Ser Pro Cys Leu His Asn Gly Arg Cys Leu Asp Lys Ile Asn Glu Phe  
500 505 510

Gln Cys Glu Cys Pro Thr Gly Phe Thr Gly His Leu Cys Gln Tyr Asp  
515 520 525

Val Asp Glu Cys Ala Ser Thr Pro Cys Lys Asn Gly Ala Lys Cys Leu  
530 535 540

Asp Gly Pro Asn Thr Tyr Thr Cys Val Cys Thr Glu Gly Tyr Thr Gly  
545 550 555 560

Thr His Cys Glu Val Asp Ile Asp Glu Cys Asp Pro Asp Pro Cys His  
565 570 575

Tyr Gly Ser Cys Lys Asp Gly Val Ala Thr Phe Thr Cys Leu Cys Arg  
580 585 590

Pro Gly Tyr Thr Gly His His Cys Glu Thr Asn Ile Asn Glu Cys Ser  
595 600 605

Ser Gln Pro Cys Arg Leu Arg Gly Thr Cys Gln Asp Pro Asp Asn Ala  
610 615 620

Tyr Leu Cys Phe Cys Leu Lys Gly Thr Thr Gly Pro Asn Cys Glu Ile  
625 630 635 640

Asn Leu Asp Asp Cys Ala Ser Ser Pro Cys Asp Ser Gly Thr Cys Leu  
645 650 655

Asp Lys Ile Asp Gly Tyr Glu Cys Ala Cys Glu Pro Gly Tyr Thr Gly  
660 665 670

Ser Met Cys Asn Ser Asn Ile Asp Glu Cys Ala Gly Asn Pro Cys His  
675 680 685

Asn Gly Gly Thr Cys Glu Asp Gly Ile Asn Gly Phe Thr Cys Arg Cys  
690 695 700

Pro Glu Gly Tyr His Asp Pro Thr Cys Leu Ser Glu Val Asn Glu Cys  
705 710 715 720

Asn Ser Asn Pro Cys Val His Gly Ala Cys Arg Asp Ser Leu Asn Gly  
725 730 735

Tyr Lys Cys Asp Cys Asp Pro Gly Trp Ser Gly Thr Asn Cys Asp Ile  
740 745 750

Asn Asn Asn Glu Cys Glu Ser Asn Pro Cys Val Asn Gly Gly Thr Cys  
755 760 765

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Lys Asp Met Thr Ser Gly Ile Val Cys Thr Cys Arg Glu Gly Phe Ser  
770 775 780

Gly Pro Asn Cys Gln Thr Asn Ile Asn Glu Cys Ala Ser Asn Pro Cys  
785 790 795 800

Leu Asn Lys Gly Thr Cys Ile Asp Asp Val Ala Gly Tyr Lys Cys Asn  
805 810 815

Cys Leu Leu Pro Tyr Thr Gly Ala Thr Cys Glu Val Val Leu Ala Pro  
820 825 830

Cys Ala Pro Ser Pro Cys Arg Asn Gly Gly Glu Cys Arg Gln Ser Glu  
835 840 845

Asp Tyr Glu Ser Phe Ser Cys Val Cys Pro Thr Ala Gly Ala Lys Gly  
850 855 860

Gln Thr Cys Glu Val Asp Ile Asn Glu Cys Val Leu Ser Pro Cys Arg  
865 870 875 880

His Gly Ala Ser Cys Gln Asn Thr His Gly Xaa Tyr Arg Cys His Cys  
885 890 895

Gln Ala Gly Tyr Ser Gly Arg Asn Cys Glu Thr Asp Ile Asp Asp Cys  
900 905 910

Arg Pro Asn Pro Cys His Asn Gly Gly Ser Cys Thr Asp Gly Ile Asn  
915 920 925

Thr Ala Phe Cys Asp Cys Leu Pro Gly Phe Arg Gly Thr Phe Cys Glu  
930 935 940

Glu Asp Ile Asn Glu Cys Ala Ser Asp Pro Cys Arg Asn Gly Ala Asn  
945 950 955 960

Cys Thr Asp Cys Val Asp Ser Tyr Thr Cys Thr Cys Pro Ala Gly Phe  
965 970 975

Ser Gly Ile His Cys Glu Asn Asn Thr Pro Asp Cys Thr Glu Ser Ser  
980 985 990

Cys Phe Asn Gly Gly Thr Cys Val Asp Gly Ile Asn Ser Phe Thr Cys  
995 1000 1005

Leu Cys Pro Pro Gly Phe Thr Gly Ser Tyr Cys Gln His Val Val  
1010 1015 1020

Asn Glu Cys Asp Ser Arg Pro Cys Leu Leu Gly Gly Thr Cys Gln  
1025 1030 1035



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Asp	Gly	Arg	Gly	Leu	His	Arg	Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Thr
	1040					1045					1050			
Gly	Pro	Asn	Cys	Gln	Asn	Leu	Val	His	Trp	Cys	Asp	Ser	Ser	Pro
	1055					1060					1065			
Cys	Lys	Asn	Gly	Gly	Lys	Cys	Trp	Gln	Thr	His	Thr	Gln	Tyr	Arg
	1070					1075					1080			
Cys	Glu	Cys	Pro	Ser	Gly	Trp	Thr	Gly	Leu	Tyr	Cys	Asp	Val	Pro
	1085					1090					1095			
Ser	Val	Ser	Cys	Glu	Val	Ala	Ala	Gln	Arg	Gln	Gly	Val	Asp	Val
	1100					1105					1110			
Ala	Arg	Leu	Cys	Gln	His	Gly	Gly	Leu	Cys	Val	Asp	Ala	Gly	Asn
	1115					1120					1125			
Thr	His	His	Cys	Arg	Cys	Gln	Ala	Gly	Tyr	Thr	Gly	Ser	Tyr	Cys
	1130					1135					1140			
Glu	Asp	Leu	Val	Asp	Glu	Cys	Ser	Pro	Ser	Pro	Cys	Gln	Asn	Gly
	1145					1150					1155			
Ala	Thr	Cys	Thr	Asp	Tyr	Leu	Gly	Gly	Tyr	Ser	Cys	Lys	Cys	Val
	1160					1165					1170			
Ala	Gly	Tyr	His	Gly	Val	Asn	Cys	Ser	Glu	Glu	Ile	Asp	Glu	Cys
	1175					1180					1185			
Leu	Ser	His	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Leu	Asp	Leu	Pro
	1190					1195					1200			
Asn	Thr	Tyr	Lys	Cys	Ser	Cys	Pro	Arg	Gly	Thr	Gln	Gly	Val	His
	1205					1210					1215			
Cys	Glu	Ile	Asn	Val	Asp	Asp	Cys	Asn	Pro	Pro	Val	Asp	Pro	Val
	1220					1225					1230			
Ser	Arg	Ser	Pro	Lys	Cys	Phe	Asn	Asn	Gly	Thr	Cys	Val	Asp	Gln
	1235					1240					1245			
Val	Gly	Gly	Tyr	Ser	Cys	Thr	Cys	Pro	Pro	Gly	Phe	Val	Gly	Glu
	1250					1255					1260			
Arg	Cys	Glu	Gly	Asp	Val	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Asp
	1265					1270					1275			
Ala	Arg	Gly	Thr	Gln	Asn	Cys	Val	Gln	Arg	Val	Asn	Asp	Phe	His
	1280					1285					1290			

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Cys Glu 1295 Cys Arg Ala Gly His 1300 Thr Gly Arg Arg Cys 1305 Glu Ser Val  
 Ile Asn 1310 Gly Cys Lys Gly Lys 1315 Pro Cys Lys Asn Gly 1320 Gly Thr Cys  
 Ala Val 1325 Ala Ser Asn Thr Ala 1330 Arg Gly Phe Ile Cys 1335 Lys Cys Pro  
 Ala Gly 1340 Phe Glu Gly Ala Thr 1345 Cys Glu Asn Asp Ala 1350 Arg Thr Cys  
 Gly Ser 1355 Leu Arg Cys Leu Asn 1360 Gly Gly Thr Cys Ile 1365 Ser Gly Pro  
 Arg Ser 1370 Pro Thr Cys Leu Cys 1375 Leu Gly Pro Phe Thr 1380 Gly Pro Glu  
 Cys Gln 1385 Phe Pro Ala Ser Ser 1390 Pro Cys Leu Gly Gly 1395 Asn Pro Cys  
 Tyr Asn 1400 Gln Gly Thr Cys Glu 1405 Pro Thr Ser Glu Ser 1410 Pro Phe Tyr  
 Arg Cys 1415 Leu Cys Pro Ala Lys 1420 Phe Asn Gly Leu Leu 1425 Cys His Ile  
 Leu Asp 1430 Tyr Ser Phe Gly Gly 1435 Gly Ala Gly Arg Asp 1440 Ile Pro Pro  
 Pro Leu 1445 Ile Glu Glu Ala Cys 1450 Glu Leu Pro Glu Cys 1455 Gln Glu Asp  
 Ala Gly 1460 Asn Lys Val Cys Ser 1465 Leu Gln Cys Asn Asn 1470 His Ala Cys  
 Gly Trp 1475 Asp Gly Gly Asp Cys 1480 Ser Leu Asn Phe Asn 1485 Asp Pro Trp  
 Lys Asn 1490 Cys Thr Gln Ser Leu 1495 Gln Cys Trp Lys Tyr 1500 Phe Ser Asp  
 Gly His 1505 Cys Asp Ser Gln Cys 1510 Asn Ser Ala Gly Cys 1515 Leu Phe Asp  
 Gly Phe 1520 Asp Cys Gln Arg Ala 1525 Glu Gly Gln Cys Asn 1530 Pro Leu Tyr  
 Asp Gln 1535 Tyr Cys Lys Asp His 1540 Phe Ser Asp Gly His 1545 Cys Asp Gln

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Gly Ala 1805 Leu Met Asp Asp Asn 1810 Gln Asn Glu Trp Gly 1815 Asp Glu Asp  
 Leu Glu 1820 Thr Lys Lys Phe Arg 1825 Phe Glu Glu Pro Val 1830 Val Leu Pro  
 Asp Leu 1835 Asp Asp Gln Thr Asp 1840 His Arg Gln Trp Thr 1845 Gln Gln His  
 Leu Asp 1850 Ala Ala Asp Leu Arg 1855 Met Ser Ala Met Ala 1860 Pro Thr Pro  
 Pro Gln 1865 Gly Glu Val Asp Ala 1870 Asp Cys Met Asp Val 1875 Asn Val Arg  
 Gly Pro 1880 Asp Gly Phe Thr Pro 1885 Leu Met Ile Ala Ser 1890 Cys Ser Gly  
 Gly Gly 1895 Leu Glu Thr Gly Asn 1900 Ser Glu Glu Glu Glu 1905 Asp Ala Pro  
 Ala Val 1910 Ile Ser Asp Phe Ile 1915 Tyr Gln Gly Ala Ser 1920 Leu His Asn  
 Gln Thr 1925 Asp Arg Thr Gly Glu 1930 Thr Ala Leu His Leu 1935 Ala Ala Arg  
 Tyr Ser 1940 Arg Ser Asp Ala Ala 1945 Lys Arg Leu Leu Glu 1950 Ala Ser Ala  
 Asp Ala 1955 Asn Ile Gln Asp Asn 1960 Met Gly Arg Thr Pro 1965 Leu His Ala  
 Ala Val 1970 Ser Ala Asp Ala Gln 1975 Gly Val Phe Gln Ile 1980 Leu Ile Arg  
 Asn Arg 1985 Ala Thr Asp Leu Asp 1990 Ala Arg Met His Asp 1995 Gly Thr Thr  
 Pro Leu 2000 Ile Leu Ala Ala Arg 2005 Leu Ala Val Glu Gly 2010 Met Leu Glu  
 Asp Leu 2015 Ile Asn Ser His Ala 2020 Asp Val Asn Ala Val 2025 Asp Asp Leu  
 Gly Lys 2030 Ser Ala Leu His Trp 2035 Ala Ala Ala Val Asn 2040 Asn Val Asp  
 Ala Ala 2045 Val Val Leu Leu Lys 2050 Asn Gly Ala Asn Lys 2055 Asp Met Gln

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Asn Asn Arg Glu Glu Thr Pro Leu Phe Leu Ala Ala Arg Glu Gly  
 2060 2065 2070  
 Ser Tyr Glu Thr Ala Lys Val Leu Leu Asp His Phe Ala Asn Arg  
 2075 2080 2085  
 Asp Ile Thr Asp His Met Asp Arg Leu Pro Arg Asp Ile Ala Gln  
 2090 2095 2100  
 Glu Arg Met His His Asp Ile Val Arg Leu Leu Asp Glu Tyr Asn  
 2105 2110 2115  
 Leu Val Arg Ser Pro Gln Leu His Gly Ala Pro Leu Gly Gly Thr  
 2120 2125 2130  
 Pro Thr Leu Ser Pro Pro Leu Cys Ser Pro Asn Gly Tyr Leu Gly  
 2135 2140 2145  
 Ser Leu Lys Pro Gly Val Gln Gly Lys Lys Val Arg Lys Pro Ser  
 2150 2155 2160  
 Ser Lys Gly Leu Ala Cys Gly Ser Lys Glu Ala Lys Asp Leu Lys  
 2165 2170 2175  
 Ala Arg Arg Lys Lys Ser Gln Asp Gly Lys Gly Cys Leu Leu Asp  
 2180 2185 2190  
 Ser Ser Gly Met Leu Ser Pro Val Asp Ser Leu Glu Ser Pro His  
 2195 2200 2205  
 Gly Tyr Leu Ser Asp Val Ala Ser Pro Pro Leu Leu Pro Ser Pro  
 2210 2215 2220  
 Phe Gln Gln Ser Pro Ser Val Pro Leu Asn His Leu Pro Gly Met  
 2225 2230 2235  
 Pro Asp Thr His Leu Gly Ile Gly His Leu Asn Val Ala Ala Lys  
 2240 2245 2250  
 Pro Glu Met Ala Ala Leu Gly Gly Gly Gly Arg Leu Ala Phe Glu  
 2255 2260 2265  
 Thr Gly Pro Pro Arg Leu Ser His Leu Pro Val Ala Ser Gly Thr  
 2270 2275 2280  
 Ser Thr Val Leu Gly Ser Ser Ser Gly Gly Ala Leu Asn Phe Thr  
 2285 2290 2295  
 Val Gly Gly Ser Thr Ser Leu Asn Gly Gln Cys Glu Trp Leu Ser  
 2300 2305 2310

## 212583.ST25

Arg Leu Gln Ser Gly Met Val Pro Asn Gln Tyr Asn Pro Leu Arg  
2315 2320 2325

Gly Ser Val Ala Pro Gly Pro Leu Ser Thr Gln Ala Pro Ser Leu  
2330 2335 2340

Gln His Gly Met Val Gly Pro Leu His Ser Ser Leu Ala Ala Ser  
2345 2350 2355

Ala Leu Ser Gln Met Met Ser Tyr Gln Gly Leu Pro Ser Thr Arg  
2360 2365 2370

Leu Ala Thr Gln Pro His Leu Val Gln Thr Gln Gln Val Gln Pro  
2375 2380 2385

Gln Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro Ala Asn Ile  
2390 2395 2400

Gln Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Pro Gln Pro  
2405 2410 2415

His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu Gly Arg Ser  
2420 2425 2430

Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val  
2435 2440

<210> 3

<211> 1218

<212> PRT

<213> Homo sapiens

<400> 3

Met Arg Ser Pro Arg Thr Arg Gly Arg Ser Gly Arg Pro Leu Ser Leu  
1 5 10 15

Leu Leu Ala Leu Leu Cys Ala Leu Arg Ala Lys Val Cys Gly Ala Ser  
20 25 30

Gly Gln Phe Glu Leu Glu Ile Leu Ser Met Gln Asn Val Asn Gly Glu  
35 40 45

Leu Gln Asn Gly Asn Cys Cys Gly Gly Ala Arg Asn Pro Gly Asp Arg  
50 55 60

Lys Cys Thr Arg Asp Glu Cys Asp Thr Tyr Phe Lys Val Cys Leu Lys  
65 70 75 80

## 212583.ST25

Glu Tyr Gln Ser Arg Val Thr Ala Gly Gly Pro Cys Ser Phe Gly Ser  
85 90 95

Gly Ser Thr Pro Val Ile Gly Gly Asn Thr Phe Asn Leu Lys Ala Ser  
100 105 110

Arg Gly Asn Asp Arg Asn Arg Ile Val Leu Pro Phe Ser Phe Ala Trp  
115 120 125

Pro Arg Ser Tyr Thr Leu Leu Val Glu Ala Trp Asp Ser Ser Asn Asp  
130 135 140

Thr Val Gln Pro Asp Ser Ile Ile Glu Lys Ala Ser His Ser Gly Met  
145 150 155 160

Ile Asn Pro Ser Arg Gln Trp Gln Thr Leu Lys Gln Asn Thr Gly Val  
165 170 175

Ala His Phe Glu Tyr Gln Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr  
180 185 190

Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly  
195 200 205

His Tyr Ala Cys Asp Gln Asn Gly Asn Lys Thr Cys Met Glu Gly Trp  
210 215 220

Met Gly Pro Glu Cys Asn Arg Ala Ile Cys Arg Gln Gly Cys Ser Pro  
225 230 235 240

Lys His Gly Ser Cys Lys Leu Pro Gly Asp Cys Arg Cys Gln Tyr Gly  
245 250 255

Trp Gln Gly Leu Tyr Cys Asp Lys Cys Ile Pro His Pro Gly Cys Val  
260 265 270

His Gly Ile Cys Asn Glu Pro Trp Gln Cys Leu Cys Glu Thr Asn Trp  
275 280 285

Gly Gly Gln Leu Cys Asp Lys Asp Leu Asn Tyr Cys Gly Thr His Gln  
290 295 300

Pro Cys Leu Asn Gly Gly Thr Cys Ser Asn Thr Gly Pro Asp Lys Tyr  
305 310 315 320

Gln Cys Ser Cys Pro Glu Gly Tyr Ser Gly Pro Asn Cys Glu Ile Ala  
325 330 335

Glu His Ala Cys Leu Ser Asp Pro Cys His Asn Arg Gly Ser Cys Lys  
340 345 350

## 212583.ST25

Glu Thr Ser<sub>355</sub> Leu Gly Phe Glu Cys<sub>360</sub> Glu Cys Ser Pro Gly<sub>365</sub> Trp Thr Gly

Pro Thr<sub>370</sub> Cys Ser Thr Asn Ile<sub>375</sub> Asp Asp Cys Ser Pro Asn Asn Cys Ser

His Gly Gly Thr Cys Gln<sub>390</sub> Asp Leu Val Asn Gly<sub>395</sub> Phe Lys Cys Val Cys<sub>400</sub>

Pro Pro Gln Trp Thr<sub>405</sub> Gly Lys Thr Cys Gln<sub>410</sub> Leu Asp Ala Asn Glu<sub>415</sub> Cys

Glu Ala Lys Pro<sub>420</sub> Cys Val Asn Ala Lys<sub>425</sub> Ser Cys Lys Asn Leu<sub>430</sub> Ile Ala

Ser Tyr Tyr<sub>435</sub> Cys Asp Cys Leu Pro<sub>440</sub> Gly Trp Met Gly Gln<sub>445</sub> Asn Cys Asp

Ile Asn Ile Asn Asp Cys Leu<sub>455</sub> Gly Gln Cys Gln Asn<sub>460</sub> Asp Ala Ser Cys

Arg Asp Leu Val Asn Gly<sub>470</sub> Tyr Arg Cys Ile Cys<sub>475</sub> Pro Pro Gly Tyr Ala<sub>480</sub>

Gly Asp His Cys Glu<sub>485</sub> Arg Asp Ile Asp Glu<sub>490</sub> Cys Ala Ser Asn Pro Cys<sub>495</sub>

Leu Asn Gly Gly<sub>500</sub> His Cys Gln Asn Glu<sub>505</sub> Ile Asn Arg Phe Gln<sub>510</sub> Cys Leu

Cys Pro Thr<sub>515</sub> Gly Phe Ser Gly Asn<sub>520</sub> Leu Cys Gln Leu Asp<sub>525</sub> Ile Asp Tyr

Cys Glu<sub>530</sub> Pro Asn Pro Cys Gln<sub>535</sub> Asn Gly Ala Gln Cys<sub>540</sub> Tyr Asn Arg Ala

Ser Asp Tyr Phe Cys Lys<sub>550</sub> Cys Pro Glu Asp Tyr<sub>555</sub> Glu Gly Lys Asn Cys<sub>560</sub>

Ser His Leu Lys Asp<sub>565</sub> His Cys Arg Thr Thr<sub>570</sub> Pro Cys Glu Val Ile<sub>575</sub> Asp

Ser Cys Thr Val<sub>580</sub> Ala Met Ala Ser Asn<sub>585</sub> Asp Thr Pro Glu Gly<sub>590</sub> Val Arg

Tyr Ile Ser<sub>595</sub> Ser Asn Val Cys Gly<sub>600</sub> Pro His Gly Lys Cys<sub>605</sub> Lys Ser Gln

Ser Gly<sub>610</sub> Gly Lys Phe Thr Cys<sub>615</sub> Asp Cys Asn Lys Gly<sub>620</sub> Phe Thr Gly Thr



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Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn  
625 630 635 640

Gly Gly Thr Cys Ile Asp Gly Val Asn Ser Tyr Lys Cys Ile Cys Ser  
645 650 655

Asp Gly Trp Glu Gly Ala Tyr Cys Glu Thr Asn Ile Asn Asp Cys Ser  
660 665 670

Gln Asn Pro Cys His Asn Gly Gly Thr Cys Arg Asp Leu Val Asn Asp  
675 680 685

Phe Tyr Cys Asp Cys Lys Asn Gly Trp Lys Gly Lys Thr Cys His Ser  
690 695 700

Arg Asp Ser Gln Cys Asp Glu Ala Thr Cys Asn Asn Gly Gly Thr Cys  
705 710 715 720

Tyr Asp Glu Gly Asp Ala Phe Lys Cys Met Cys Pro Gly Gly Trp Glu  
725 730 735

Gly Thr Thr Cys Asn Ile Ala Arg Asn Ser Ser Cys Leu Pro Asn Pro  
740 745 750

Cys His Asn Gly Gly Thr Cys Val Val Asn Gly Glu Ser Phe Thr Cys  
755 760 765

Val Cys Lys Glu Gly Trp Glu Gly Pro Ile Cys Ala Gln Asn Thr Asn  
770 775 780

Asp Cys Ser Pro His Pro Cys Tyr Asn Ser Gly Thr Cys Val Asp Gly  
785 790 795 800

Asp Asn Trp Tyr Arg Cys Glu Cys Ala Pro Gly Phe Ala Gly Pro Asp  
805 810 815

Cys Arg Ile Asn Ile Asn Glu Cys Gln Ser Ser Pro Cys Ala Phe Gly  
820 825 830

Ala Thr Cys Val Asp Glu Ile Asn Gly Tyr Arg Cys Val Cys Pro Pro  
835 840 845

Gly His Ser Gly Ala Lys Cys Gln Glu Val Ser Gly Arg Pro Cys Ile  
850 855 860

Thr Met Gly Ser Val Ile Pro Asp Gly Ala Lys Trp Asp Asp Asp Cys  
865 870 875 880

Asn Thr Cys Gln Cys Leu Asn Gly Arg Ile Ala Cys Ser Lys Val Trp  
885 890 895

## 212583.ST25

Cys Gly Pro Arg Pro Cys Leu Leu His Lys Gly His Ser Glu Cys Pro  
900 905 910

Ser Gly Gln Ser Cys Ile Pro Ile Leu Asp Asp Gln Cys Phe Val His  
915 920 925

Pro Cys Thr Gly Val Gly Glu Cys Arg Ser Ser Ser Leu Gln Pro Val  
930 935 940

Lys Thr Lys Cys Thr Ser Asp Ser Tyr Tyr Gln Asp Asn Cys Ala Asn  
945 950 955 960

Ile Thr Phe Thr Phe Asn Lys Glu Met Met Ser Pro Gly Leu Thr Thr  
965 970 975

Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val  
980 985 990

Ser Ala Glu Tyr Ser Ile Tyr Ile Ala Cys Glu Pro Ser Pro Ser Ala  
995 1000 1005

Asn Asn Glu Ile His Val Ala Ile Ser Ala Glu Asp Ile Arg Asp  
1010 1015 1020

Asp Gly Asn Pro Ile Lys Glu Ile Thr Asp Lys Ile Ile Asp Leu  
1025 1030 1035

Val Ser Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala  
1040 1045 1050

Glu Val Arg Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp Phe  
1055 1060 1065

Leu Val Pro Leu Leu Ser Ser Val Leu Thr Val Ala Trp Ile Cys  
1070 1075 1080

Cys Leu Val Thr Ala Phe Tyr Trp Cys Leu Arg Lys Arg Arg Lys  
1085 1090 1095

Pro Gly Ser His Thr His Ser Ala Ser Glu Asp Asn Thr Thr Asn  
1100 1105 1110

Asn Val Arg Glu Gln Leu Asn Gln Ile Lys Asn Pro Ile Glu Lys  
1115 1120 1125

His Gly Ala Asn Thr Val Pro Ile Lys Asp Tyr Glu Asn Lys Asn  
1130 1135 1140

Ser Lys Met Ser Lys Ile Arg Thr His Asn Ser Glu Val Glu Glu  
1145 1150 1155

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Asp Asp Met Asp Lys His Gln Gln Lys Ala Arg Phe Ala Lys Gln  
1160 1165 1170

Pro Ala Tyr Thr Leu Val Asp Arg Glu Glu Lys Pro Pro Asn Gly  
1175 1180 1185

Thr Pro Thr Lys His Pro Asn Trp Thr Asn Lys Gln Asp Asn Arg  
1190 1195 1200

Asp Leu Glu Ser Ala Gln Ser Leu Asn Arg Met Glu Tyr Ile Val  
1205 1210 1215

<210> 4

<211> 1238

<212> PRT

<213> Homo sapiens

<400> 4

Met Arg Ala Gln Gly Arg Gly Arg Leu Pro Arg Arg Leu Leu Leu Leu  
1 5 10 15

Leu Ala Leu Trp Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu  
20 25 30

Gln Leu Ser Ala Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala  
35 40 45

Cys Cys Asp Gly Asp Gly Arg Thr Thr Arg Ala Gly Gly Cys Gly His  
50 55 60

Asp Glu Cys Asp Thr Tyr Val Arg Val Cys Leu Lys Glu Tyr Gln Ala  
65 70 75 80

Lys Val Thr Pro Thr Gly Pro Cys Ser Tyr Gly His Gly Ala Thr Pro  
85 90 95

Val Leu Gly Gly Asn Ser Phe Tyr Leu Pro Pro Ala Gly Ala Ala Gly  
100 105 110

Asp Arg Ala Arg Ala Arg Ala Arg Ala Gly Gly Asp Gln Asp Pro Gly  
115 120 125

Leu Val Val Ile Pro Phe Gln Phe Ala Trp Pro Arg Ser Phe Thr Leu  
130 135 140

Ile Val Glu Ala Trp Asp Trp Asp Asn Asp Thr Thr Pro Asn Glu Glu  
145 150 155 160

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Leu Leu Ile Glu Arg Val Ser His Ala Gly Met Ile Asn Pro Glu Asp  
165 170 175

Arg Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu  
180 185 190

Gln Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn  
195 200 205

Lys Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp  
210 215 220

Gln Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys  
225 230 235 240

Lys Glu Ala Val Cys Lys Gln Gly Cys Asn Leu Leu His Gly Gly Cys  
245 250 255

Thr Val Pro Gly Glu Cys Arg Cys Ser Tyr Gly Trp Gln Gly Arg Phe  
260 265 270

Cys Asp Glu Cys Val Pro Tyr Pro Gly Cys Val His Gly Ser Cys Val  
275 280 285

Glu Pro Trp Gln Cys Asn Cys Glu Thr Asn Trp Gly Gly Leu Leu Cys  
290 295 300

Asp Lys Asp Leu Asn Tyr Cys Gly Ser His His Pro Cys Thr Asn Gly  
305 310 315 320

Gly Thr Cys Ile Asn Ala Glu Pro Asp Gln Tyr Arg Cys Thr Cys Pro  
325 330 335

Asp Gly Tyr Ser Gly Arg Asn Cys Glu Lys Ala Glu His Ala Cys Thr  
340 345 350

Ser Asn Pro Cys Ala Asn Gly Gly Ser Cys His Glu Val Pro Ser Gly  
355 360 365

Phe Glu Cys His Cys Pro Ser Gly Trp Ser Gly Pro Thr Cys Ala Leu  
370 375 380

Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys Ala Ala Gly Gly Thr Cys  
385 390 395 400

Val Asp Gln Val Asp Gly Phe Glu Cys Ile Cys Pro Glu Gln Trp Val  
405 410 415

Gly Ala Thr Cys Gln Leu Asp Ala Asn Glu Cys Glu Gly Lys Pro Cys  
420 425 430

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Leu Asn Ala Phe Ser Cys Lys Asn Leu Ile Gly Gly Tyr Tyr Cys Asp  
 435 440 445

Cys Ile Pro Gly Trp Lys Gly Ile Asn Cys His Ile Asn Val Asn Asp  
 450 455 460

Cys Arg Gly Gln Cys Gln His Gly Gly Thr Cys Lys Asp Leu Val Asn  
 465 470 475 480

Gly Tyr Gln Cys Val Cys Pro Arg Gly Phe Gly Gly Arg His Cys Glu  
 485 490 495

Leu Glu Arg Asp Lys Cys Ala Ser Ser Pro Cys His Ser Gly Gly Leu  
 500 505 510

Cys Glu Asp Leu Ala Asp Gly Phe His Cys His Cys Pro Gln Gly Phe  
 515 520 525

Ser Gly Pro Leu Cys Glu Val Asp Val Asp Leu Cys Glu Pro Ser Pro  
 530 535 540

Cys Arg Asn Gly Ala Arg Cys Tyr Asn Leu Glu Gly Asp Tyr Tyr Cys  
 545 550 555 560

Ala Cys Pro Asp Asp Phe Gly Gly Lys Asn Cys Ser Val Pro Arg Glu  
 565 570 575

Pro Cys Pro Gly Gly Ala Cys Arg Val Ile Asp Gly Cys Gly Ser Asp  
 580 585 590

Ala Gly Pro Gly Met Pro Gly Thr Ala Ala Ser Gly Val Cys Gly Pro  
 595 600 605

His Gly Arg Cys Val Ser Gln Pro Gly Gly Asn Phe Ser Cys Ile Cys  
 610 615 620

Asp Ser Gly Phe Thr Gly Thr Tyr Cys His Glu Asn Ile Asp Asp Cys  
 625 630 635 640

Leu Gly Gln Pro Cys Arg Asn Gly Gly Thr Cys Ile Asp Glu Val Asp  
 645 650 655

Ala Phe Arg Cys Phe Cys Pro Ser Gly Trp Glu Gly Glu Leu Cys Asp  
 660 665 670

Thr Asn Pro Asn Asp Cys Leu Pro Asp Pro Cys His Ser Arg Gly Arg  
 675 680 685

Cys Tyr Asp Leu Val Asn Asp Phe Tyr Cys Ala Cys Asp Asp Gly Trp  
 690 695 700

## 212583.ST25

Lys Gly Lys Thr Cys His Ser Arg Glu Phe Gln Cys Asp Ala Tyr Thr  
705 710 715 720

Cys Ser Asn Gly Gly Thr Cys Tyr Asp Ser Gly Asp Thr Phe Arg Cys  
725 730 735

Ala Cys Pro Pro Gly Trp Lys Gly Ser Thr Cys Ala Val Ala Lys Asn  
740 745 750

Ser Ser Cys Leu Pro Asn Pro Cys Val Asn Gly Gly Thr Cys Val Gly  
755 760 765

Ser Gly Ala Ser Phe Ser Cys Ile Cys Arg Asp Gly Trp Glu Gly Arg  
770 775 780

Thr Cys Thr His Asn Thr Asn Asp Cys Asn Pro Leu Pro Cys Tyr Asn  
785 790 795 800

Gly Gly Ile Cys Val Asp Gly Val Asn Trp Phe Arg Cys Glu Cys Ala  
805 810 815

Pro Gly Phe Ala Gly Pro Asp Cys Arg Ile Asn Ile Asp Glu Cys Gln  
820 825 830

Ser Ser Pro Cys Ala Tyr Gly Ala Thr Cys Val Asp Glu Ile Asn Gly  
835 840 845

Tyr Arg Cys Ser Cys Pro Pro Gly Arg Ala Gly Pro Arg Cys Gln Glu  
850 855 860

Val Ile Gly Phe Gly Arg Ser Cys Trp Ser Arg Gly Thr Pro Phe Pro  
865 870 875 880

His Gly Ser Ser Trp Val Glu Asp Cys Asn Ser Cys Arg Cys Leu Asp  
885 890 895

Gly Arg Arg Asp Cys Ser Lys Val Trp Cys Gly Trp Lys Pro Cys Leu  
900 905 910

Leu Ala Gly Gln Pro Glu Ala Leu Ser Ala Gln Cys Pro Leu Gly Gln  
915 920 925

Arg Cys Leu Glu Lys Ala Pro Gly Gln Cys Leu Arg Pro Pro Cys Glu  
930 935 940

Ala Trp Gly Glu Cys Gly Ala Glu Glu Pro Pro Ser Thr Pro Cys Leu  
945 950 955 960

Pro Arg Ser Gly His Leu Asp Asn Asn Cys Ala Arg Leu Thr Leu His  
965 970 975

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Phe Asn Arg Asp His Val Pro Gln Gly Thr Thr Val Gly Ala Ile Cys  
                   980                  985                  990

Ser Gly Ile Arg Ser Leu Pro Ala Thr Arg Ala Val Ala Arg Asp Arg  
           995                  1000                  1005

Leu Leu Val Leu Leu Cys Asp Arg Ala Ser Ser Gly Ala Ser Ala  
      1010                  1015                  1020

Val Glu Val Ala Val Ser Phe Ser Pro Ala Arg Asp Leu Pro Asp  
      1025                  1030                  1035

Ser Ser Leu Ile Gln Gly Ala Ala His Ala Ile Val Ala Ala Ile  
      1040                  1045                  1050

Thr Gln Arg Gly Asn Ser Ser Leu Leu Leu Ala Val Thr Glu Val  
      1055                  1060                  1065

Lys Val Glu Thr Val Val Thr Gly Gly Ser Ser Thr Gly Leu Leu  
      1070                  1075                  1080

Val Pro Val Leu Cys Gly Ala Phe Ser Val Leu Trp Leu Ala Cys  
      1085                  1090                  1095

Val Val Leu Cys Val Trp Trp Thr Arg Lys Arg Arg Lys Glu Arg  
      1100                  1105                  1110

Glu Arg Ser Arg Leu Pro Arg Glu Glu Ser Ala Asn Asn Gln Trp  
      1115                  1120                  1125

Ala Pro Leu Asn Pro Ile Arg Asn Pro Ile Glu Arg Pro Gly Gly  
      1130                  1135                  1140

His Lys Asp Val Leu Tyr Gln Cys Lys Asn Phe Thr Pro Pro Pro  
      1145                  1150                  1155

Arg Arg Ala Asp Glu Ala Leu Pro Gly Pro Ala Gly His Ala Ala  
      1160                  1165                  1170

Val Arg Glu Asp Glu Glu Asp Glu Asp Leu Gly Arg Gly Glu Glu  
      1175                  1180                  1185

Asp Ser Leu Glu Ala Glu Lys Phe Leu Ser His Lys Phe Thr Lys  
      1190                  1195                  1200

Asp Pro Gly Arg Ser Pro Gly Arg Pro Ala His Trp Ala Ser Gly  
      1205                  1210                  1215

Pro Lys Val Asp Asn Arg Ala Val Arg Ser Ile Asn Glu Ala Arg  
      1220                  1225                  1230

Tyr Val Gly Lys Glu  
1235

<210> 5

<211> 257

<212> PRT

<213> Homo sapiens

<400> 5

Pro Leu Ala Glu Pro Leu Ala Pro Arg Asp Val Phe Ile Ala Val Lys  
1 5 10 15

Thr Thr Lys Lys Phe His Arg Ala Arg Leu Asp Leu Leu Leu Glu Thr  
20 25 30

Trp Ile Ser Arg His Lys Glu Met Thr Phe Ile Phe Thr Asp Gly Glu  
35 40 45

Asp Glu Ala Leu Ala Arg His Thr Gly Asn Val Val Ile Thr Asn Cys  
50 55 60

Ser Ala Ala His Ser Arg Gln Ala Leu Ser Cys Lys Met Ala Val Glu  
65 70 75 80

Tyr Asp Arg Phe Ile Glu Ser Gly Arg Lys Trp Phe Cys His Val Asp  
85 90 95

Asp Asp Asn Tyr Val Asn Leu Arg Ala Leu Leu Leu Leu Leu Ala Ser  
100 105 110

Tyr Pro His Thr Leu Asp Val Tyr Val Gly Lys Pro Ser Leu Asp Arg  
115 120 125

Pro Ile Gln Ala Met Glu Arg Val Ser Glu Asn Lys Val Arg Pro Val  
130 135 140

His Phe Trp Phe Ala Thr Gly Gly Ala Gly Phe Cys Ile Ser Arg Gly  
145 150 155 160

Leu Ala Leu Lys Met Ser Pro Trp Ala Ser Gly Gly His Phe Met Asn  
165 170 175

Thr Ala Glu Arg Ile Arg Leu Pro Asp Asp Cys Thr Ile Gly Tyr Ile  
180 185 190

Val Glu Ala Leu Leu Gly Val Pro Leu Ile Arg Ser Gly Leu Phe His  
195 200 205



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Ser His Leu Glu Asn Leu Gln Gln Val Pro Thr Ser Glu Leu His Glu  
210 215 220

Gln Val Thr Leu Ser Tyr Gly Met Phe Glu Asn Lys Arg Asn Ala Val  
225 230 235 240

His Val Lys Gly Pro Phe Ser Val Glu Ala Asp Pro Ser Arg Trp Gly  
245 250 255

Asn

<210> 6

<211> 321

<212> PRT

<213> Homo sapiens

<400> 6

Met Gln Cys Arg Leu Pro Arg Gly Leu Ala Gly Ala Leu Leu Thr Leu  
1 5 10 15

Leu Cys Met Gly Leu Leu Cys Leu Arg Tyr His Leu Asn Leu Ser Pro  
20 25 30

Gln Arg Val Gln Gly Thr Pro Glu Leu Ser Gln Pro Asn Pro Gly Pro  
35 40 45

Pro Lys Leu Gln Leu His Asp Val Phe Ile Ala Val Lys Thr Thr Arg  
50 55 60

Ala Phe His Arg Leu Arg Leu Glu Leu Leu Leu Asp Thr Trp Val Ser  
65 70 75 80

Arg Thr Arg Glu Leu Thr Phe Val Phe Thr Asp Ser Pro Asp Lys Gly  
85 90 95

Leu Gln Glu Arg Leu Gly Ser His Leu Val Val Thr Asn Cys Ser Ala  
100 105 110

Glu His Ser His Pro Ala Leu Ser Cys Lys Met Ala Ala Glu Phe Asp  
115 120 125

Thr Phe Leu Ala Ser Gly Leu Arg Trp Phe Cys His Val Asp Asp Asp  
130 135 140

Asn Tyr Val Asn Pro Arg Ala Leu Leu Gln Leu Leu Arg Ala Phe Pro  
145 150 155 160

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Leu Ala Arg Asp Val Tyr Val Gly Arg Pro Ser Leu Asn Arg Pro Ile  
165 170 175

His Ala Ser Glu Pro Gln Pro His Asn Arg Thr Arg Leu Val Gln Phe  
180 185 190

Trp Phe Ala Thr Gly Gly Ala Gly Phe Cys Ile Asn Arg Lys Leu Ala  
195 200 205

Leu Lys Met Ala Pro Trp Ala Ser Gly Ser Arg Phe Met Asp Thr Ser  
210 215 220

Ala Leu Ile Arg Leu Pro Asp Asp Cys Thr Met Gly Tyr Ile Ile Glu  
225 230 235 240

Cys Lys Leu Gly Gly Arg Leu Gln Pro Ser Pro Leu Phe His Ser His  
245 250 255

Leu Glu Thr Leu Gln Leu Leu Arg Thr Ala Gln Leu Pro Glu Gln Val  
260 265 270

Thr Leu Ser Tyr Gly Val Phe Glu Gly Lys Leu Asn Val Ile Lys Leu  
275 280 285

Gln Gly Pro Phe Ser Pro Glu Glu Asp Pro Ser Arg Phe Arg Ser Leu  
290 295 300

His Cys Leu Leu Tyr Pro Asp Thr Pro Trp Cys Pro Gln Leu Gly Ala  
305 310 315 320

Arg

<210> 7

<211> 191

<212> PRT

<213> Homo sapiens

<400> 7

Met Ser Arg Ala Arg Gly Ala Leu Cys Arg Ala Cys Leu Ala Leu Ala  
1 5 10 15

Ala Ala Leu Ala Ala Leu Leu Leu Leu Pro Leu Pro Leu Pro Arg Ala  
20 25 30

Pro Ala Pro Ala Arg Thr Pro Ala Pro Ala Pro Arg Ala Pro Pro Ser  
35 40 45

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## 212583.ST25

Arg Pro Ala Ala Pro Ser Leu Arg Pro Asp Asp Val Phe Ile Ala Val  
50 55 60

Lys Thr Thr Arg Lys Asn His Gly Pro Arg Leu Arg Leu Leu Leu Arg  
65 70 75 80

Thr Trp Ile Ser Arg Ala Arg Gln Gln Thr Phe Ile Phe Thr Asp Gly  
85 90 95

Asp Asp Pro Glu Leu Glu Leu Gln Gly Gly Asp Arg Val Ile Asn Thr  
100 105 110

Asn Cys Ser Ala Val Arg Thr Arg Gln Ala Leu Cys Cys Lys Met Ser  
115 120 125

Val Glu Tyr Asp Lys Phe Ile Glu Ser Gly Arg Lys Trp Phe Cys His  
130 135 140

Val Asp Asp Asp Asn Tyr Val Asn Ala Arg Ser Leu Leu His Leu Leu  
145 150 155 160

Ser Ser Phe Ser Pro Ser Gln Asp Val Tyr Leu Gly Arg Pro Ser Leu  
165 170 175

Asp His Pro Ile Glu Ala Thr Glu Arg Val Gln Gly Gly Arg Thr  
180 185 190

<210> 8

<211> 1404

<212> PRT

<213> Drosophila melanogaster

<400> 8

Met Phe Arg Lys His Phe Arg Arg Lys Pro Ala Thr Ser Ser Ser Leu  
1 5 10 15

Glu Ser Thr Ile Glu Ser Ala Asp Ser Leu Gly Met Ser Lys Lys Thr  
20 25 30

Ala Thr Lys Arg Gln Arg Pro Arg His Arg Val Pro Lys Ile Ala Thr  
35 40 45

Leu Pro Ser Thr Ile Arg Asp Cys Arg Ser Leu Lys Ser Ala Cys Asn  
50 55 60

Leu Ile Ala Leu Ile Leu Ile Leu Leu Val His Lys Ile Ser Ala Ala  
65 70 75 80

## 212583.ST25

Gly Asn Phe Glu Leu Glu Ile Leu Glu Ile Ser Asn Thr Asn Ser His  
85 90 95

Leu Leu Asn Gly Tyr Cys Cys Gly Met Pro Ala Glu Leu Arg Ala Thr  
100 105 110

Lys Thr Ile Gly Cys Ser Pro Cys Thr Thr Ala Phe Arg Leu Cys Leu  
115 120 125

Lys Glu Tyr Gln Thr Thr Glu Gln Gly Ala Ser Ile Ser Thr Gly Cys  
130 135 140

Ser Phe Gly Asn Ala Thr Thr Lys Ile Leu Gly Gly Ser Ser Phe Val  
145 150 155 160

Leu Ser Asp Pro Gly Val Gly Ala Ile Val Leu Pro Phe Thr Phe Arg  
165 170 175

Trp Thr Lys Ser Phe Thr Leu Ile Leu Gln Ala Leu Asp Met Tyr Asn  
180 185 190

Thr Ser Tyr Pro Asp Ala Glu Arg Leu Ile Glu Glu Thr Ser Tyr Ser  
195 200 205

Gly Val Ile Leu Pro Ser Pro Glu Trp Lys Thr Leu Asp His Ile Gly  
210 215 220

Arg Asn Ala Arg Ile Thr Tyr Arg Val Arg Val Gln Cys Ala Val Thr  
225 230 235 240

Tyr Tyr Asn Thr Thr Cys Thr Thr Phe Cys Arg Pro Arg Asp Asp Gln  
245 250 255

Phe Gly His Tyr Ala Cys Gly Ser Glu Gly Gln Lys Leu Cys Leu Asn  
260 265 270

Gly Trp Gln Gly Val Asn Cys Glu Glu Ala Ile Cys Lys Ala Gly Cys  
275 280 285

Asp Pro Val His Gly Lys Cys Asp Arg Pro Gly Glu Cys Glu Cys Arg  
290 295 300

Pro Gly Trp Arg Gly Pro Leu Cys Asn Glu Cys Met Val Tyr Pro Gly  
305 310 315 320

Cys Lys His Gly Ser Cys Asn Gly Ser Ala Trp Lys Cys Val Cys Asp  
325 330 335

Thr Asn Trp Gly Gly Ile Leu Cys Asp Gln Asp Leu Asn Phe Cys Gly  
340 345 350

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Thr His Glu Pro Cys Lys His Gly Gly Thr Cys Glu Asn Thr Ala Pro  
355 360 365

Asp Lys Tyr Arg Cys Thr Cys Ala Glu Gly Leu Ser Gly Glu Gln Cys  
370 375 380

Glu Ile Val Glu His Pro Cys Ala Thr Arg Pro Cys Arg Asn Gly Gly  
385 390 395 400

Thr Cys Thr Leu Lys Thr Ser Asn Arg Thr Gln Ala Gln Val Tyr Arg  
405 410 415

Thr Ser His Gly Arg Ser Asn Met Gly Arg Pro Val Arg Arg Ser Ser  
420 425 430

Ser Met Arg Ser Leu Asp His Leu Arg Pro Glu Gly Gln Ala Leu Asn  
435 440 445

Gly Ser Ser Ser Ser Gly Leu Val Ser Leu Gly Ser Leu Gln Leu Gln  
450 455 460

Gln Gln Leu Ala Pro Asp Phe Thr Cys Asp Cys Ala Ala Gly Trp Thr  
465 470 475 480

Gly Pro Thr Cys Glu Ile Asn Ile Asp Glu Cys Ala Gly Gly Pro Cys  
485 490 495

Glu His Gly Gly Thr Cys Ile Asp Leu Ile Gly Gly Phe Arg Cys Glu  
500 505 510

Cys Pro Pro Glu Trp His Gly Asp Val Cys Gln Val Asp Val Asn Glu  
515 520 525

Cys Glu Ala Pro His Ser Ala Gly Ile Ala Ala Asn Ala Leu Leu Thr  
530 535 540

Thr Thr Ala Thr Ala Ile Ile Gly Ser Asn Leu Ser Ser Thr Ala Leu  
545 550 555 560

Leu Ala Ala Leu Thr Ser Ala Val Ala Ser Thr Ser Leu Ala Ile Gly  
565 570 575

Pro Cys Ile Asn Ala Lys Glu Cys Arg Asn Gln Pro Gly Ser Phe Ala  
580 585 590

Cys Ile Cys Lys Glu Gly Trp Gly Gly Val Thr Cys Ala Glu Asn Leu  
595 600 605

Asp Asp Cys Val Gly Gln Cys Arg Asn Gly Ala Thr Cys Ile Asp Leu  
610 615 620

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Val Asn Asp Tyr Arg Cys Ala Cys Ala Ser Gly Phe Thr Gly Arg Asp  
625 630 635 640

Cys Glu Thr Asp Ile Asp Glu Cys Ala Thr Ser Pro Cys Arg Asn Gly  
645 650 655

Gly Glu Cys Val Asp Met Val Gly Lys Phe Asn Cys Ile Cys Pro Leu  
660 665 670

Gly Tyr Ser Gly Ser Leu Cys Glu Glu Ala Lys Glu Asn Cys Thr Pro  
675 680 685

Ser Pro Cys Leu Glu Gly His Cys Leu Asn Thr Pro Glu Gly Tyr Tyr  
690 695 700

Cys His Cys Pro Pro Asp Arg Ala Gly Lys His Cys Glu Gln Leu Arg  
705 710 715 720

Pro Leu Cys Ser Gln Pro Pro Cys Asn Glu Gly Cys Phe Ala Asn Val  
725 730 735

Ser Leu Ala Thr Ser Ala Thr Thr Thr Thr Thr Thr Thr Thr Ala  
740 745 750

Thr Thr Thr Arg Lys Met Ala Lys Pro Ser Gly Leu Pro Cys Ser Gly  
755 760 765

His Gly Ser Cys Glu Met Ser Asp Val Gly Thr Phe Cys Lys Cys His  
770 775 780

Val Gly His Thr Gly Thr Phe Cys Glu His Asn Leu Asn Glu Cys Ser  
785 790 795 800

Pro Asn Pro Cys Arg Asn Gly Gly Ile Cys Leu Asp Gly Asp Gly Asp  
805 810 815

Phe Thr Cys Glu Cys Met Ser Gly Trp Thr Gly Lys Arg Cys Ser Glu  
820 825 830

Arg Ala Thr Gly Cys Tyr Ala Gly Gln Cys Gln Asn Gly Gly Thr Cys  
835 840 845

Met Pro Gly Ala Pro Asp Lys Ala Leu Gln Pro His Cys Arg Cys Ala  
850 855 860

Pro Gly Trp Thr Gly Leu Phe Cys Ala Glu Ala Ile Asp Gln Cys Arg  
865 870 875 880

Gly Gln Pro Cys His Asn Gly Gly Thr Cys Glu Ser Gly Ala Gly Trp  
885 890 895

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Phe Arg Cys Val Cys Ala Gln Gly Phe Ser Gly Pro Asp Cys Arg Ile  
 900 905 910  
 Asn Val Asn Glu Cys Ser Pro Gln Pro Cys Gln Gly Gly Ala Thr Cys  
 915 920 925  
 Ile Asp Gly Ile Gly Gly Tyr Ser Cys Ile Cys Pro Pro Gly Arg His  
 930 935 940  
 Gly Leu Arg Cys Glu Ile Leu Leu Ser Asp Pro Lys Ser Ala Cys Gln  
 945 950 955 960  
 Asn Ala Ser Asn Thr Ile Ser Pro Tyr Thr Ala Leu Asn Arg Ser Gln  
 965 970 975  
 Asn Trp Leu Asp Ile Ala Leu Thr Gly Arg Thr Glu Asp Asp Glu Asn  
 980 985 990  
 Cys Asn Ala Cys Val Cys Glu Asn Gly Thr Ser Arg Cys Thr Asn Leu  
 995 1000 1005  
 Trp Cys Gly Leu Pro Asn Cys Tyr Lys Val Asp Pro Leu Ser Lys  
 1010 1015 1020  
 Ser Ser Asn Leu Ser Gly Val Cys Lys Gln His Glu Val Cys Val  
 1025 1030 1035  
 Pro Ala Leu Ser Glu Thr Cys Leu Ser Ser Pro Cys Asn Val Arg  
 1040 1045 1050  
 Gly Asp Cys Arg Ala Leu Glu Pro Ser Arg Arg Val Ala Pro Pro  
 1055 1060 1065  
 Arg Leu Pro Ala Lys Ser Ser Cys Trp Pro Asn Gln Ala Val Val  
 1070 1075 1080  
 Asn Glu Asn Cys Ala Arg Leu Thr Ile Leu Leu Ala Leu Glu Arg  
 1085 1090 1095  
 Val Gly Lys Gly Ala Ser Val Glu Gly Leu Cys Ser Leu Val Arg  
 1100 1105 1110  
 Val Leu Leu Ala Ala Gln Leu Ile Lys Lys Pro Ala Ser Thr Phe  
 1115 1120 1125  
 Gly Gln Asp Pro Gly Met Leu Met Val Leu Cys Asp Leu Lys Thr  
 1130 1135 1140  
 Gly Thr Asn Asp Thr Val Glu Leu Thr Val Ser Ser Ser Lys Leu  
 1145 1150 1155

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Asn Asp Pro Gln Leu Pro Val Ala Val Gly Leu Leu Gly Glu Leu  
 1160 1165 1170  
 Leu Ser Ser Arg Gln Leu Asn Gly Ile Gln Arg Arg Lys Glu Leu  
 1175 1180 1185  
 Glu Leu Gln His Ala Lys Leu Ala Ala Leu Thr Ser Ile Val Glu  
 1190 1195 1200  
 Val Lys Leu Glu Thr Ala Arg Val Ala Asp Gly Ser Gly His Ser  
 1205 1210 1215  
 Leu Leu Ile Gly Val Leu Cys Gly Val Phe Ile Val Leu Val Gly  
 1220 1225 1230  
 Phe Ser Val Phe Ile Ser Leu Tyr Trp Lys Gln Arg Leu Ala Tyr  
 1235 1240 1245  
 Arg Thr Ser Ser Gly Met Asn Leu Thr Pro Ser Leu Asp Ala Leu  
 1250 1255 1260  
 Arg His Glu Glu Glu Lys Ser Asn Asn Leu Gln Asn Glu Glu Asn  
 1265 1270 1275  
 Leu Arg Arg Tyr Thr Asn Pro Leu Lys Gly Ser Thr Ser Ser Leu  
 1280 1285 1290  
 Arg Ala Ala Thr Gly Met Glu Leu Ser Leu Asn Pro Ala Pro Glu  
 1295 1300 1305  
 Leu Ala Ala Ser Ala Ala Ser Ser Ser Ala Leu His Arg Ser Gln  
 1310 1315 1320  
 Pro Leu Phe Pro Pro Cys Asp Phe Glu Arg Glu Leu Asp Ser Ser  
 1325 1330 1335  
 Thr Gly Leu Lys Gln Ala His Lys Arg Ser Ser Gln Ile Leu Leu  
 1340 1345 1350  
 His Lys Thr Gln Asn Ser Asp Met Arg Lys Asn Thr Val Gly Ser  
 1355 1360 1365  
 Leu Asp Ser Pro Arg Lys Asp Phe Gly Lys Arg Ser Ile Asn Cys  
 1370 1375 1380  
 Lys Ser Met Pro Pro Ser Ser Gly Asp Glu Gly Ser Asp Val Leu  
 1385 1390 1395  
 Ala Thr Thr Val Met Val  
 1400



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<210> 9  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> JAG-1b Notch ligand  
<220>  
<221> misc\_feature  
<223> JAG-1c Notch ligand

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Ala Asp Asp Tyr Tyr Tyr Gly Phe Gly Ala Asn Lys Phe Gly Arg Pro  
1 5 10 15

Arg

<210> 10  
<211> 21  
<212> PRT  
<213> artificial/unknown

<220>  
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<223> JAG-1c Notch ligand

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1 5 10 15

Arg Asp Asp Phe Phe  
20

<210> 11  
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<212> PRT  
<213> artificial/unknown

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; JAG-1 Notch ligand

&lt;400&gt; 11

Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro  
 1 5 10 15

Arg

&lt;210&gt; 12

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; artificial/unknown

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; r-JAG1 Notch ligand

&lt;400&gt; 12

Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys Phe Gly Arg Pro  
 1 5 10 15

Arg Asp Asp

&lt;210&gt; 13

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; artificial/unknown

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; Scrambled JAG peptide

&lt;400&gt; 13

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Arg Cys Gly Pro Asp Cys Phe Asp Asn Tyr Gly Arg Tyr Lys Tyr Cys  
 1 5 10 15

Phe

<210> 14

<211> 22

<212> DNA

<213> artificial/unknown

<220>

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<223> NF kappa B oligonucleotide

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 agttgagggg actttcccag gc

22

<210> 15

<211> 282

<212> DNA

<213> Artificial/Unknown

<220>

<221> misc\_feature

<223> Human Notch repeats 11-12 - a Notch antagnoist polypeptide

<220>

<221> exon

<222> (1)..(282)

<223>

<220>

<221> misc\_feature

<222> (1)..(33)

<223> encodes a tag that is dispensible for Notch antagnoistic activity

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<400> 15
atg gct gca gaa ttc cat cat cat cat cat cat cat cag gac gtg gat gag      48
Met Ala Ala Glu Phe His His His His His His Gln Asp Val Asp Glu
1          5          10
tgc tcg ctg ggt gcc aac ccc tgc gag cat gcg ggc aag tgc atc aac      96
Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala Gly Lys Cys Ile Asn
          20          25          30
acg ctg ggc tcc ttc gag tgc cag tgt ctg cag ggc tac acg ggc ccc      144
Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro
          35          40          45
cga tgc gag atc gac gtc aac gag tgc gtc tcg aac ccg tgc cag aac      192
Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn
          50          55          60
gac gcc acc tgc ctg gac cag att ggg gag ttc cag tgc atg tgc atg      240
Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met
65          70          75          80
ccc ggc tac gag ggt gtg cac tgc gag gtc aac aca tga tga      282
Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr
          85          90

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&lt;210&gt; 16

&lt;211&gt; 92

&lt;212&gt; PRT

&lt;213&gt; Artificial/Unknown

&lt;220&gt;

&lt;221&gt; Misc

&lt;222&gt; (1)..(92)

&lt;223&gt; Notch antagonist polypeptide containing tag sequence

&lt;220&gt;

&lt;221&gt; Misc

&lt;222&gt; (1)..(11)

&lt;223&gt; tag sequence for detecting polypeptide

&lt;220&gt;

&lt;221&gt; Misc

&lt;222&gt; (12)..(92)

&lt;223&gt; human Notch repeats 11 and 12

&lt;400&gt; 16

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Met Ala Ala Glu Phe His His His His His His Gln Asp Val Asp Glu  
1 5 10 15

Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala Gly Lys Cys Ile Asn  
20 25 30

Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro  
35 40 45

Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn  
50 55 60

Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met  
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Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr  
85 90

<210> 17

<211> 249

<212> DNA

<213> Artificial/Unknown

<220>

<221> exon

<222> (1)..(249)

<223> Encodes human Notch repeats 11-12

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1 5 10 15

ggc aag tgc atc aac acg ctg ggc tcc ttc gag tgc cag tgt ctg cag 96  
Gly Lys Cys Ile Asn Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln  
20 25 30

ggc tac acg ggc ccc cga tgc gag atc gac gtc aac gag tgc gtc tcg 144  
Gly Tyr Thr Gly Pro Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser  
35 40 45

aac ccg tgc cag aac gac gcc acc tgc ctg gac cag att ggg gag ttc 192  
Asn Pro Cys Gln Asn Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe  
50 55 60

cag tgc atg tgc atg ccc ggc tac gag ggt gtg cac tgc gag gtc aac 240  
Gln Cys Met Cys Met Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn  
65 70 75 80

aca tga tga 249  
Thr

&lt;210&gt; 18

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Artificial/Unknown

&lt;220&gt;

&lt;221&gt; misc

&lt;222&gt; (1)..(81)

&lt;223&gt; Human Notch repeats 11 and 12 - functions as Notch antagonist

&lt;400&gt; 18

Gln Asp Val Asp Glu Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala  
 1 5 10 15

Gly Lys Cys Ile Asn Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln  
 20 25 30

Gly Tyr Thr Gly Pro Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser  
 35 40 45

Asn Pro Cys Gln Asn Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe  
 50 55 60

Gln Cys Met Cys Met Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn  
 65 70 75 80

Thr

101200" 6424660